Extension
W152

Tennessee Quality Milk Initiative

Factsheet

Estimating Losses Using Somatic Cell Counts

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Somatic Cells

- Primarily made up of white blood cells
- Used to gauge the level of infection in the udder

Factors Affecting SCC

- Infection is primary cause of SCC increases
- Uninfected glands: SCC not significantly influenced by lactation number, stage of lactation, estrus, heat stress, exercise, stray voltage or presence of other infections
- Infected glands: SCC can be exaggerated by factors that cause a decrease in milk production (i.e., a dilution effect)

Infection Status

- < 200,000 cells/ml = uninfected udder
- > 200,000 cells/ml = infected udder
    1. Infection is occurring
    2. Has recently occurred, or
    3. The mammary gland is still recovering from an infection, which may take days, weeks or longer
- The more severe the infection, the higher the SCC

Losses Due to Mastitis

- Decreased milk production
- Discarded milk
- Increased treatment costs
- Premature culling
- Decreased genetic potential
- Decreased reproductive performance
- Death
- Loss of milk quality premiums
- Loss of milk market due to high SCC
- Contamination of bulk tank with antibiotics

Table 1. Estimating Production Losses and Infection Level Using Bulk Tank Milk SCC

Bulk tank milk SCC	% Production loss*	% Quarters infected
200,000	0	6
500.000	6	16
1,000,000	18	32
1,500,000	29	48

*Production loss calculated as a percent of production expected at 200,000 cells/ml

Source: Eberhart, 1982

Table 2. Estimating Production Losses Using DHI SCC

DHI-SCC Score	Average SCC	Decrease in Yield (lbs/305d)* Lactation 1	Lactation 2
0	12,500	---	---
1	25,000	---	---
2	50,000	---	---
3	100,000	200	400
4	200,000	400	800
5	400,000	600	1,200
6	800,000	800	1,600
7	1,600,000	1,000	2,000

* Comparisons are with lactation yield at SCC score of 2.

Source: Raubertas, 1982

Economic Losses From Production

To calculate economic losses, average the herd (or group) SCC over a one-year period and use Table 2 to estimate production losses per lactation number.

A. Calculate pounds lost for 1st lactation cows:

No. Head X Pounds lost = (A) Pounds lost 1st lactation

B. Calculate pounds lost for 2nd+ lactation

No. Head X Pounds lost = (B) Pounds lost 2nd+ lactation

C. Calculate annual production losses

A + B = Total pounds lost

D. Calculate financial losses

Average milk price/pound X Total pounds lost = $ ***Annual financial loss due to mastitis***

Economic Losses From Premiums

In some areas, premiums are awarded based on SCC. Premium opportunity information needs to come from the processor or milk cooperative that is buying your milk.

Your SCC Goal: _____

A. Calculate potential premium difference

($/cwt) Max. SCC premium @ goal - ($/cwt) Current SCC premium received = ($/cwt) Potential premium difference

B. Calculate monthly premium opportunity

(cwt) Avg cwt milk shipped/month X ($/cwt) Potential premium difference = $ ***Current monthly premium opportunity***