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# W152-Estimating Losses Using Somatic Cell Counts

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UT 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***

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