

SOMATIC CELL COUNT INVERSELY RELATED TO POTENTIAL PROFITS IN DAIRYING

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Summary

Somatic Cell Count (SCC) affects productivity of a dairy herd and, thus, potential profit. Almost all SCC problems can be solved by management. The DHIA SCC program is very useful for evaluating the situation in a dairy herd to solve such problems.

(Key Words: Somatic Cell Count, Mastitis, Rolling Herd Average.)

Introduction

Herd average Somatic Cell Count (SCC) is inversely related to potential profit in a dairy herd because of the relationship of SCC to mammary infections. As SCC increases, more mastitis occurs, resulting in lower milk production, higher treatment costs, more dumped milk, and more cows culled. A recent summary indicated that SCC average and Rolling Herd Average (RHA) are inversely related, and most SCC problems can be resolved with improved management.

Procedures

Data were collected from Dairy Herd Improvement Association (DHIA) summaries for 463 dairy herds in Kansas in 1991. Herds were divided into four production groups (quartiles) based on RHAs for milk production.

Results and Discussion

A DHIA summary of Kansas Holstein herds grouped according to RHA in Table 1 shows that SCC, SCC Linear Score, and dollar loss/day from SCC decrease as RHA increases. Table 2 contains more summary information

that is useful in evaluating the potential causes of higher SCC in lower producing herds.

First lactation SCC averages are good indications of the incidence of mastitis in heifers entering the herd. Heifers should be free of mastitis at freshening, with an SCC average of less than 200,000. Lower producing herds exceed this level, which indicates that many herd SCC problems are related to too many heifers freshening that are already infected with mastitis.

Table 2 also demonstrates that SCC average is lowest in first lactation cows in all production groups. If first lactation SCC is too high, then the herd average SCC will likely be too high because the SCC increases in succeeding lactations. Many herds could markedly reduce their SCC, if the heifers entered the herd with low SCC.

The most likely reasons for freshening heifers to have high SCC are heifers 1) becoming infected in a farm pond during late gestation, 2) becoming infected because of poor sanitation in the springer pen, and/or 3) becoming infected because of poor control of flies.

A similar sort of a problem is indicated by the high SCC of all early lactation cows (Table 2). In many herds, bred heifers and dry cows are kept together in a pasture, and the springing cows and heifers are in the same springer pen. Some managers could go a long ways toward solving their SCC problem by improving the environment for the bred heifers and dry cows.

All production groups have lower SCC averages when in milk <50 days compared to >300 days in milk. This might indicate that

some reduction in mammary infection is occurring because of dry cow treatment. However, SCC in lower producing herds is still too high, indicating that too many cows are becoming reinfected with mastitis-causing bacteria near the time of freshening.

Another conclusion that can be drawn from the summary in Table 2 is that SCC does not increase as much during lactation in higher

producing herds as in lower producing herds. This indicates that increased rate of mammary infections are due to 1) poor milking techniques, including sanitation; 2) milking equipment operating inadequately; 3) poor environmental conditions; and/or 4) damage to teat ends caused by warts. Any herd experiencing an increase of more than 150,000 SCC as cows go from early lactation to late lactation should review these conditions.

Table 1. Comparison of Rolling Herd Average Groups to Somatic Cell Count, Linear Score, and Losses in Dairy Herds

RHA	SCC	Linear score	Loss/cow/day
13,084	483,000	3.9	\$0.37
15,737	402,000	3.5	\$0.31
17,762	317,000	3.2	\$0.24
20,187	262,000	2.9	\$0.18

Table 2. Comparison of Rolling Herd Average Groups to SCC Averaged by Lactation Number and Stage of Lactation

RHA	SCC averages ($\times 1,000$)							
	Lactation number			Stage of lactation (days)				
	1	2	3+	<50	51-100	101-200	201-300	>300
13,084	277	375	647	423	431	463	588	588
15,737	255	333	541	297	356	400	519	473
17,762	205	268	440	273	296	322	346	400
20,187	183	227	354	212	240	273	287	328