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RELATIONSHIP OF HERD AVERAGE SOMATIC CELL
COUNT AND SPONTANEOUS RECOVERY
FROM SUBCLINICAL MASTITIS

J. R. Dunham

Summary

The rate of spontaneous recovery from subclinical mastitis was evaluated in 56 Kansas DHI herds participating in the Somatic Cell Count (SCC) program. Herds were classified as low (<300,000) or high (>600,000) based on herd SCC average. Comparisons between low and high SCC-herds were made for each cow's ability to recover from a subclinical case of mastitis (>600,000 SCC). Low-SCC herds had a rate of spontaneous recovery that was more than three times greater than that of high-SCC herds. Average SCC of cows with subclinical mastitis was similar in low and high herds, as well as the average SCC of cows following spontaneous recovery. Results illustrate the importance of monitoring monthly SCC reports. Proper attention to good procedures of milking management includes: attention to milking techniques, proper function of milking equipment, and attention to sanitation and housing conditions. As a result, herds with low SCC tests will have higher production and fewer subclinical cases of mastitis.

Introduction

The Somatic Cell Count (SCC) of an individual cow is a good indicator of intramammary infection (subclinical mastitis). As the SCC increases above 200,000, there is an increasing chance that one or more quarters are infected with mastitis causing bacteria. These infections are considered subclinical when there are no signs of abnormal milk.

Subclinical mastitis causes increased SCCs since leucocytes migrate to the mammary system in an attempt to destroy the invading bacteria. If the leucocytes win the battle, as evidenced by a SCC lower than 200,000, then it is considered that the cow spontaneously recovered from subclinical mastitis.

The Mid-States Dairy Records Processing Center's SCC Report denotes cows with SCCs greater than 600,000. These cows are considered to be subclinical mastitis cases, although any cow with a SCC higher than 200,000 might be infected. Some of the cows appearing on the high SCC list drop below 200,000 SCC without any treatment, which suggests that the leucocytes cured the infection and thus spontaneous recovery occurred.

Procedure

The rate of spontaneous recovery from subclinical mastitis in Kansas DHIA herds was evaluated by surveying 56 herds participating in the Kansas DHIA SCC program. The herds were ranked high or low according to the SCC average. Those herds averaging more than 600,000 SCC were summarized in the high group and those averaging less than 300,000 were included in the low group. Each cow was evaluated during the previous six DHI tests. Cows showing SCC greater than 600,000 were considered subclinical cases. Those cows with SCC lower than 200,000 the following month were considered to be spontaneous recovery cases.

Results and Discussion

The survey (Table 1) illustrates that the rate of spontaneous recovery from subclinical mastitis is more than three times higher (43.4% vs 12.1%) in herds averaging <300,000 SCC than in herds averaging >600,000 SCC. The function of leucocytes, which are the major components of the SCC, is to alleviate stress. Therefore, it appears that milking management results in much less stressful conditions in lower SCC herds. Another interpretation would be that the leucocytes have a much better opportunity to cure subclinical mastitis in low SCC herds.

Table 1. Rate of spontaneous recovery from subclinical mastitis^a.

Item	SCC Avg > 600,000	SCC Avg < 300,000
Number herds	27	29
Number cows	1714	1766
Avg SCC	853,667	215,055
Subclinical cases ^b	744	213
% cases subclinical ^c	43.4	12.1
No. spontaneous recoveries	91	92
% spontaneous recovery	12.2	43.2

^aAny cow with a SCC >600,000 is designated as subclinical, however, some of these cows probably were showing clinical mastitis.

^bSubclinical cows were defined as those cows having one or more SCC >600,000 during the last six tests.

^cPercent cows subclinical is the percentage of cows with at least one SCC >600,000 during the last six tests.

Table 2 shows that the average SCC of cows with subclinical mastitis and those that recovered was similar. Again, this illustrates that milking management, which includes 1) cow preparation and milking techniques, 2) sanitation, 3) housing, and 4) milking equipment, are such that cows with subclinical mastitis have a much better chance for spontaneous recovery.

Table 2. Somatic Cell Count of cows with subclinical mastitis.

Item	Avg SCC Subclinical Cows	Avg SCC Next Test
<u>Herds >600,000 SCC</u>		
Spontaneous recovery	1,677,703	126,175
Non-spontaneous recovery	1,855,305	1,887,315
<u>Herds <300,000 SCC</u>		
Spontaneous recovery	1,416,780	111,693
Non-spontaneous recovery	1,875,719	1,406,063

The much higher incidence of subclinical mastitis in high SCC herds and the low rate of spontaneous recovery should be reason enough for every dairy producer to review milking management. In addition, many studies have shown that milk production is reduced as the SCC increases, since there is more subclinical mastitis.

Most authorities do not recommend treating high-SCC cows with antibiotics as an effective means of lowering the SCC. Apparently the most effective means of reducing high SCC is to improve milking management, so that the leucocytes have an opportunity to cure subclinical mastitis.