Short-term changes of milk somatic cell count on individual udder quarters of dairy cows in different cell count ranges

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▪ Problem

Somatic cell count (SCC) is a main indicator of udder health and milk quality, it also reflects the quality of dairy management. Complete milk samples above 100,000 SCC/ml milk are a sign of subclinical or clinical mastitis.
The aim of the study was to evaluate short-term changes in SCC of individual quarters and possible consequences for milking technique and management.

▪ Material and Method

30 dairy cows were arranged in three groups, each with ten cows, according to their SCC in the last monthly milk recording (MLP).

Tab. 1: Arrangement of 30 dairy cows in three groups, each with ten cows, according to their SCC in the last monthly milk recording

Group	State of health	SCC/ml milk
1	healthy	≤100,000
2	conspicuous	>100,000 - ≤400,000
3	diseased	>400,000

Measuring principle:

1) Maximum and minimum SCC values of all quarters in each class, measured during the trial period, were averaged.
2) Mean minimum was subtracted from the mean maximum to get information about the short-term changes of SCC per group.

Fig.1: Quarter foremilk samples were collected manually without pre-stripping over a period of twelve days

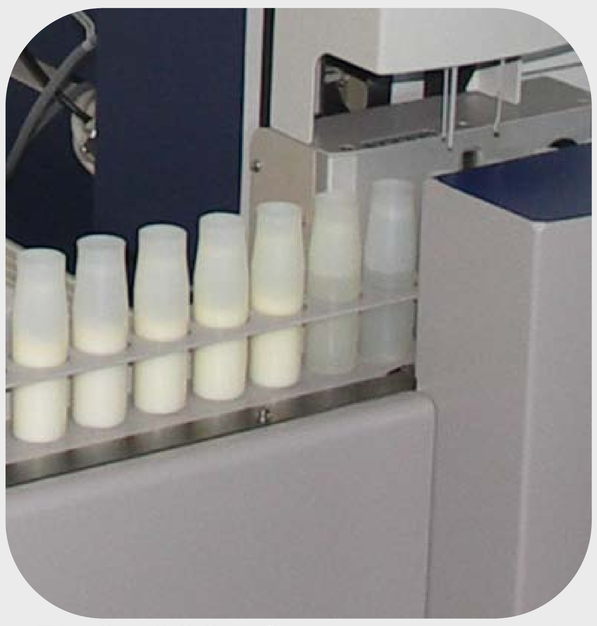

Fig.2: SCC of the unpreserved samples was measured with the Fossomatic 5000 (FOSS)

▪ Results

Short-term changes of SCC in healthy quarters are about 47,000 cells/ml milk. With 172,000 cells/ml milk conspicuous quarters show higher average fluctuations, while diseased quarters alternate even about 1.7 million cells/ml milk.

Tab.2: Frequency of healthy, conspicuous and diseased cows
Tab.3: Frequency of healthy, conspicuous and diseased quarters
(Arrangement of cows and quarters according to milk recording and lab analysis SCC)

Cows

Group		Lab analysis SCC		
Milk recording SCC		1	2	3
1	10	9	0	1
2	10	1	8	1
3	10	1	4	5
Total	30	11	12	7

Quarters

Group		Lab analysis SCC		
Milk recording SCC		1	2	3
1	40	20	15	5
2	40	8	13	19
3	40	8	11	21
Total	120	36	39	45

➡ **Better monitoring of udder health by SCC measuring on individual quarters in short-time intervals.**

➡ **Not all detected SCC peaks higher than 100,000 cells/ml milk indicate diseased quarters, but also management deficits.**

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