

COMPARISON OF UDDER HEALTH AND CELL COUNT PATTERN IN SWISS GOATS AND MILKING EWES

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Introduction



Direct and indirect methods to assess the cell counts in milk are appropriate means to monitor the udder health of individual animals and the quality of milk supplied. For cow's milk, the legal threshold limit is set at 350 000 cells/ml in Switzerland. However the interpretation of cell counts and the results of the California Mastitis Test (CMT) poses problems in the case of small ruminants, particularly goats. Therefore no comparable limit values of cell count for goat's or ewe's milk have yet been established.



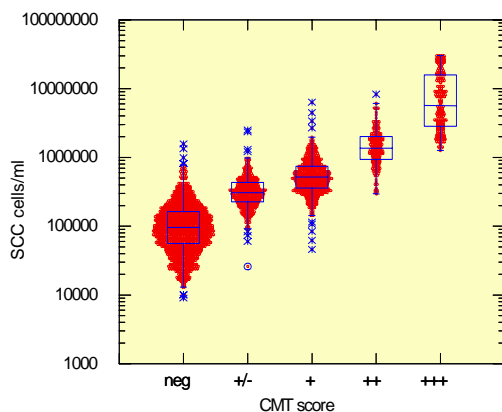
Animals, Material and Methods

A total of 2152 and 1624 udder half foremilk samples were taken at monthly intervals over a full lactation period from 136 goats and 105 milking ewes each on three different farms. The udder health status was assessed at the farms by the California Mastitis Test (CMT). The enumeration of somatic cells (SCC) was done in the laboratory by optoelectronic fluorescent detection with a Fossomatic 5000. All milk samples were further analysed bacteriologically according to the guidelines of the National Mastitis Council.

Results

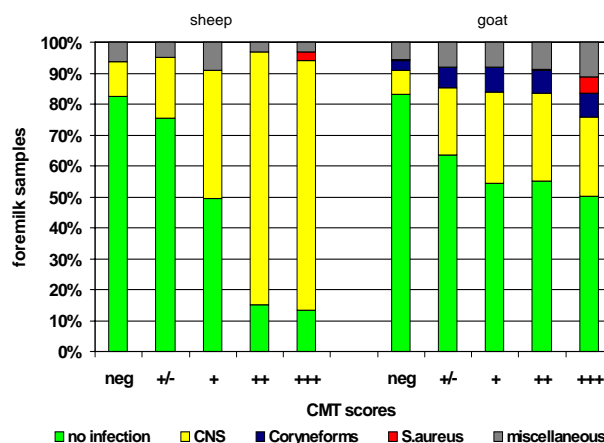
The correlation between the CMT scores and the SCC was high for both species. The geometric means of SCC for CMT negative samples (neg) were 60 000 cells/ml for ewes and 95 000 cells/ml for goats. Samples showing distinctively positive reactions (+ to +++) had SCC of 900 000 to 10 million cells/ml for ewes and 500 000 to 7 million cells/ml for goats (fig. 1).

Figure 1: Comparison between CMT scores and SCC in foremilk samples from goats



However, the relationship between cell counts and bacteriological results was different for both species: Cell counts in about 95% of ewe's milk samples from uninfected udder halves were \leq 350 000 cells/ml, whereas only 42% of goat milk samples from uninfected udder were below this limit. Therefore, 25% of the foremilk samples from uninfected goats showed a positive CMT score (+ to +++) and more than 20% of udder halves infected by coagulase negative staphylococci (CNS) were tested CMT negative (neg). In contrast, we found a good correlation between CMT results and udder infections for ewes (fig. 2).

Figure 2: Comparison between CMT scores and udder infections for ewes and goats.



The only exceptions were infections with *Staphylococcus aureus*: All samples from udder halves infected with *S. aureus* showed a strongly positive CMT reaction (++ or ++++).

Conclusions

The results showed a close relationship between the CMT reaction scores, the SCC and bacteriological infections for ewe's milk. Therefore, a cell count limit of 500 000 cells per ml for milk from healthy ewes can be suggested. As for goat's milk this relationship seems not to be very close and the diagnostic reliability for udder infection of the CMT is very poor, it would be difficult to argue for the introduction of a non-compliance cell count limit below 1 000 000 cells per ml.