

Poster 3.39. Mastitis Diagnosis in Dairy Goats through Somatic Cell Counts and California mastitis test. Preliminary Results

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Abstract

The aim of this work was to evaluate somatic cell count (SCC) and Californian mastitis test (CMT) reliability as methods to survey mastitis in Serrana goats. Microbiological diagnosis, SCC and CMT were performed on 2028 samples, collected from individual goat glands during a lactation period. According to results CMT (predictive negative value = 69.5%) may be used as a cheap and practical method for sub clinical mastitis survey in Serrana goats. Decision on SCC use will depend on additional research works, since its values were very high even for bacteriological negative samples.

1 Introduction

The use of indirect methodologies for sub clinical mastitis survey, as CMT and SCC, needs previous study of its applicability in each breed. Several authors propose different thresholds for the use of SCC in predicting intramammary infections (1,2,3). The aim of this study was to evaluate the use of these methods in order to achieve an efficient and quick survey of sub clinical mastitis in Serrana goats, a local breed from the north of Portugal.

2 Material and methods

We collected 2028 samples from two Serrana goat flocks. Milk samples were collected aseptically from each half udder for one lactation period. Each one of all samples was processed for somatic cell count (Foss electronic, Denmark), CMT and bacteriological diagnosis of sub clinical mastitis (total recount at 30°C, CFU > 500 ml⁻¹ milk)..

Table 1. Relationship between CMT and SCC.

Microbiological diagnosis	SCC ($\bar{x} \pm sd$) x10 ³
Negative	1270 ^a ± 2408
Positive	1823 ^b ± 2882

a=b, for P≤0.001.

Table 2. Relationship between CMT and SCC.

CMT	SCC ($\bar{x} \pm sd$) (x 10 ³ SC ml-1)
0	636 ^a ± 1232
1	1846 ^b ± 1984
2	4035 ^c ± 3225
3	8185 ^d ± 4857

a≠b≠c≠d, for P≤0.01

3 Results and discussion

The relationships between bacteriological diagnosis x SCC and CMT x SCC are presented on tables 1 and 2, respectively. Negative and positive bacteriological diagnoses were related to different SCC mean values (P≤0.001). Similar results were found between CMT scores and SCC mean values (P≤0.01). In both cases standard deviations were very high. SCC, as CMT, are

similar to others authors results (1,3,4). The negative predictive value (CMT score 0) was lower than the one reported by these authors (69.5% vs. > 75%), although the positive predictive value (CMT score ≥ 1) was similar (39.0% vs. < 35%). Mean SCC on bacteriological negatives samples were higher than those reported by other researchers (1) ($< 500 \times 10^3$ SC ml⁻¹), and (2) (750×10^3 SC ml⁻¹).

4 Conclusion

According to the results CMT may be used as a cheap and practical method for sub clinical mastitis survey in Serrana goats. The use of SCC for the same purpose will depend on additional research, namely on individual analysis of several animals during several lactation periods.

References

- 1 CONTRERAS, A., SIERRA, D., CORRALES, J.C., SANCHEZ, A. E MARCO, J., 1996. Physiological threshold of somatic cell count and California mastitis test for diagnosis of caprine subclinical mastitis. *Small Ruminant Research*, 21, 259-264.
 - 2 DE CRÉMOUX, R., POUTREL, B., PILLET, R., PERRIN, G., DUCÉLLIEZ M. AND HEUCHEL, V., 1996. Utilisation des numérations cellulaires pour le diagnostic des infections mammaires d'origine bactérienne chez la chèvre. In: *Proceedings of the Symposium on somatic cells and milk of small ruminants*. Bella, Italy. EAAP Publication, 77, 35-39.
 - 3 DE CRÉMOUX, R. AND POUTREL, B., 2000. Somatic cell counts in goat milk: a tool in presumptive diagnosis of intramammary infections. *Proceedings of the 7th International Conference on Goats*, France, 757-759 pp..
 - 4 PERRIN, G. & BAUDRY, C 1993. Numérations cellulaires du lait de chèvre. *Lait*, 73, 489-497.
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