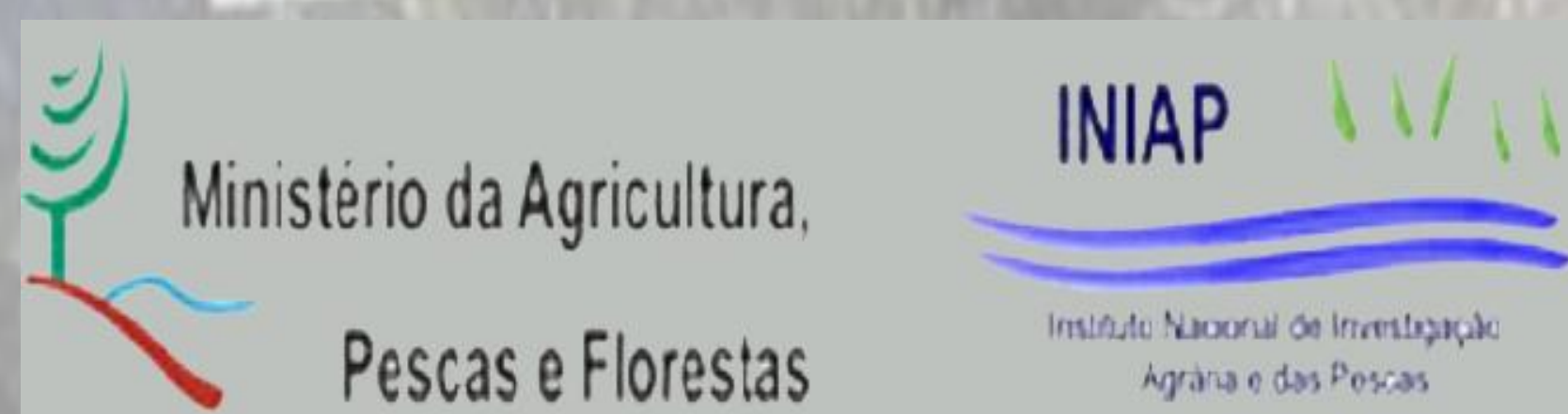# MASTITIS DIAGNOSIS IN DAIRY GOATS THROUGH SOMATIC CELL COUNTS AND CALIFORNIA MASTITIS TEST. PRELIMINARY RESULTS

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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 CTM were performed on 2028 samples, collected from individual 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.

Material and methods

- Two goat flocks were used and 2028 aseptic samples were performed during one lactation period.
- Each sample was collected manually from half udders, chilled and kept under refrigeration, until laboratory procedures.
- Microbiological diagnosis (total recount at 30ºC, CFU > 500 ml^{-1} milk) and CMT were performed in the same day and SCC (fossomatic method) after conservation (Panreac code 174748) in all samples.
- The use of geometrical mean was not possible since milk production was not evaluated.

Results and Discussion

Somatic Cells Count results are similar to others reported by Contreras *et al.* (1996) and Crémoux and Poutrel (2000). CMT results are similar to those reported by Contreras *et al.* (1996) and Perrin *et al.* (1997). Nevertheless, the negative predictive value (CMT score 0) was lower than the one reported by these authors (69.5% *vs.* > 75.0% using CMT scores 0+1), although the positive predictive value (CMT score ≥ 1) was similar (39.0% *vs.* < 35.0%).

Mean SCC on bacteriological negatives samples were clearly higher than those reported by other authors, namely Contreras *et al* (1996) (< 500 x 10^3 SC ml^{-1}), and the minimum threshold proposed by Crémoux *et al.* (1994) (750 x 10^3 SC ml^{-1}).

The analysis between females along the entire lactation showed important differences, with more than 50.0% of the animals showing very low SCC suggesting, theoretically, the possibility of producing milk with low somatic cell counts.

No statistic difference between flocks was found (P>0.05).

This study needs to be complemented with the identification of the pathogens responsible for sub clinical mastitis.

Introduction

Sub clinical mastitis in goats may be responsible for public health problems, through Protected Denomination Origin (PDO) cheeses, and certainly are important in animal health, adults and kids.

The use of indirect methodologies for sub clinical mastitis survey, as CMT and SCC in milk, needs previous study of its applicability in each breed (González-Rodríguez and Cármenes, 1996 and Perrin and Baudry, 1993), especially in goats. Somatic cell counts are very wide which is due to different causes (Bergonier *et al.*, 1996).

Several authors proposes different thresholds and techniques for the use of SCC in predicting intramammary infections (Contreras *et al.*, 1996, de Crémoux *et al.*, 1996 and de Crémoux and Poutrel, 2000) in a dynamic way.

The aim of this study was to evaluate the use of these methods (CMT and SCC) in order to achieve an efficient and quick survey of sub clinical mastitis in Serrana goats, a local breed from the north of Portugal.

Results and Discussion

The relationships between microbiological diagnosis and SCC and CMT and SCC are presented in tables 1 and 2, respectively. Negative and positive microbiological diagnoses were related to different SCC mean values (P≤0.001), although standard deviations were very high. Similar results were found between CMT scores and SCC mean values (P≤0.01). Again standard deviations were very high.

Table 1 - Relationship between microbiological diagnosis and SCC (x 10^3 SC ml^{-1})

Microbiological diagnosis	SCC (x ± sd)
Negative	1270^a ± 2408
Positive	1823^b ± 2882

a≠b, for P≤0,001.

Table 2 - Relationship between CMT and SCC (x 10^3 SC ml^{-1})

CMT	SCC (x ± sd)
0	636^a ± 1232
1	1846^b ± 1984
2	4035^c ± 3225
3	8185^d ± 4857

a≠b≠c≠d, for P≤0,01.

Conclusion

According to 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 works, namely on individual analysis over several animals during several lactation periods.

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