

Prevalence of *Staphylococcus aureus* in sheep and dairy goats in Central Italy

D. Sagrafoli, G. Giacinti, N. Marri, E. Bovi, M. C. Veschetti, C. Boselli, G. Giangolini, S. Amatiste.

Istituto Zooprofilattico Sperimentale del Lazio e della Toscana "M. Aleandri"
National Reference Centre for ovine and caprine milk and dairy products quality (C.Re.L.D.O.C.)

Staphylococcus aureus (*S. aureus*) is one of the most important etiological agents of intramammary infections (IMI) in small ruminants. Infected udders represent the main source of bacterial contamination of raw milk and raw milk products. *S. aureus* is a cause of major concern in dairy sector for economical and public health reasons, hence this pathogen has been included as a hygienic criteria in the European Regulation No 2073/2005.

In small ruminants *S. aureus* is frequently isolated from clinical mastitis, often in acute forms. In cases of sub-clinical or chronic mastitis different authors report the prevalence between 3 and 37% and between 2.4 and 11.4%, in sheep and goats respectively. Currently, scarce data are available on *S. aureus* prevalence in small ruminants in Italy.

The aim of this study was to evaluate the prevalence of *S. aureus* isolated from udder and bulk tank milk of sheep and goat.

A total of 3406 udder milk samples from lactating sheep (n=3086), goats (n=320) and 19 bulk tank milk (sheep farms n=15; goat farms n=4) were collected on dairy farms located in Central Italy during January 2014 - March 2016 period. Individual milk samples were aseptically collected before milking. At the end of milking, 1 bulk tank milk sample was collected per each farm. Individual milk samples were tested for Somatic Cells Count (SCC) and cultured for mastitis according to procedures recommended by National Mastitis Council. Bulk tank milk samples were analysed for the enumeration of coagulase-positive staphylococci (CPS).

S. aureus was detected in 12 out of the 15 (80.0%) bulk tank milk sheep farms and in 3 out of 4 (75.0%) bulk tank milk goat farms. The average content of *S. aureus* was 5.23 log cfu/mL (range: from 3.2 to 7.43 log cfu/mL).

At farm level, the prevalence of *S. aureus* in udder milk samples of sheep and goats ranged from 0.0 to 10.7% and from 0.0 to 2.4%, respectively.

The average value of SCC obtained from positive samples was 5.265.000 cells/mL (sheep) and 5.021.000 cells/mL (goat), while from negative samples was 367.000 cells/mL (sheep) and 447.000 cells/mL (goat). These results confirmed the association between high level of SCC and intramammary infection caused by *S. aureus*.

The tank milk samples from the farms with *S. aureus* negative animals resulted as well negative.

This study demonstrates the high level of bulk milk contamination against the low *S. aureus* in-farm spread. Taking in consideration the frequent use of raw milk in dairy industry in Italy the preventive/control measures against *S. aureus* are crucial. In this regard, the implementation of monitoring programs would be useful to minimize the risks for animal and public health.