Profiles of resistance of *Staphylococci* isolated from cases of subclinical mastitis in sheep in different stages of lactation and between two lactations - Zafalon L.F.[1], Martins K.B.[2], Chapaval L.[1*]

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The subclinical mastitis cause negative impact on the meat sheep herds, providing lower weight gain of lambs of sick ewes when compared to healthy. A preventive measure to control disease deserves attention of technicians and producers. The aim of this study was to identify *staphylococci* profiles of antibiotic resistance from cases of subclinical mastitis in sheep in different stages of lactation and for two periods of lactations. The milk samples were taken from all lactating sheep of a flock in São Carlos, São Paulo, Brazil and were made the evaluation of antimicrobial susceptibility in vitro of microorganisms. The milk samples were taken 14 days after calving and in the weaning in first lactation and, in later lactation in 14 and 52 days after calving and in the weaning. Coagulase-negative *staphylococci* were the microorganisms with major occurrence in both lactations and in different periods of the same lactation. Changes in the patterns of antibiotic resistance found in part of the staph strains show the importance of conscious use of antimicrobials, when necessary, for the treatment of animals affected by infectious mastitis. Microorganisms without resistance to the in vitro tests in the first lactation, presented to some active principles in second lactation, like penicillin, oxacillin and cephepime. In the second lactation some micro-organisms showed higher levels of antimicrobial resistance when compared with the first lactation to the sulphametoxazol, ciprofloxacin, cephepime, penicillin and oxacillin. The study is relevant for the disease control in herds bred similarly and helps meet sheep producers with the adoption of appropriate prophylaxis and treatment schemes in order to avoid damages caused by the disease.

Key-words: milk, treatment, staphylococci

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INTRODUCTION

The subclinical mastitis cause negative impact on the meat sheep herds, providing lower weight gain of lambs from sick ewes. The aim of this study was to identify *staphylococci* profiles of antibiotic resistance from cases of subclinical mastitis in sheep in different stages of lactation and for two periods of lactations.

METHODS

✓ Herd: The milk samples were obtained from experimental herd located at Embrapa Southeast Livestock in São Carlos, State of São Paulo. The herd studied consisted of 160 Santa Inês sheep breed (Figure 1).

✓ Milk samples:
- First lactation ☞ At the beginning (14 days postpartum) and at the end of lactation (up to three days post weaning) from April to December 2009. Second lactation ☞ the milk samples were collected at 14 and 52 days postpartum and at the end of lactation (up to three days post weaning) from May to November 2010 (Figure 2) (HARIHARAN et al., 2004).

✓ Microbiology: The microorganisms were identified, according to HOLT et al. (1994).

✓ Susceptibility tests: Diffusion technique was used, with disks containing gentamicin (10µg), penicillin (10IU), oxacillin (1µg), tetracycline (30µg), eritromicin (15µg), sulpha+trimethoprim (25µg), vancomycin (30µg), clindamycin (2µg), rifampicin (30µg), chloramphenicol (10µg), cefepime (30µg) e ciprofloxacin (5µg), in accordance with the National Committee for Clinical Laboratory Standards (NCCLS, 2005).

Figure 1 – Santa Inês Breed

Figure 2 - Sampling of milk

RESULTS

The results are shown in the following figures.

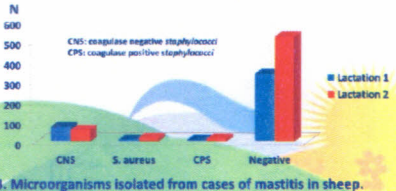

Figure 3. Microorganisms isolated from cases of mastitis in sheep.

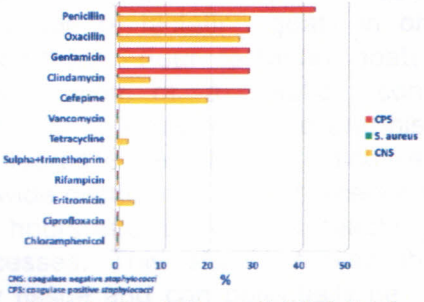

Figure 4. *Staphylococci* resistance profiles in the first lactation.

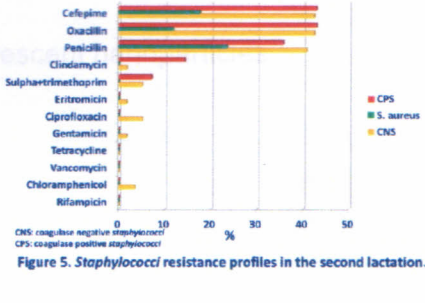

Figure 5. *Staphylococci* resistance profiles in the second lactation.

POTENCIAL IMPACTS ON SOLVING ANIMAL HEALTH ISSUES

Preventive measures to control mastitis deserves attention of technicians and producers. The study is relevant for the disease control in similar herds with the adoption of appropriate prophylaxis and treatment schemes, in order to avoid damages caused by the disease.

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REFERENCES

HARIHARAN, H.; DONACHIE, W.; MACALDOWIE, C.; KEEFE, G. Bacteriology and somatic cell counts in milk samples from ewes on a Scottish farm. *The Canadian Journal of Veterinary Research*, v.68, p.188-192, 2004.

HOLT, J.G; KRIEG, N.R.; SNEATH, P.H.A; STALEY J.T.; WILLIAMS S.T. Gram-positive *cocci*. In: BERGEY'S MANUAL OF DETERMINATIVE BACTERIOLOGY. 9. ed. Baltimore: Williams & Wilkins, 1994. p.544-551.

NATIONAL COMMITTEE FOR CLINICAL LABORATORY STANDARDS. Clinical and Laboratory Standards Institute. Performance Standards for Antimicrobial Susceptibility Testing. *Fifteenth Informational Supplement*, v.25, n.1, 2005.

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