

TITLE: ANTIMICROBIAL RESISTANCE ON *Staphylococcus aureus* ISOLATED FROM CASES SUBCLINICAL MASTITIS IN GOATS

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ABSTRACT:

Caprine mastitis is one of the most common diseases in dairy herds, causing damage mainly due to the decrease in milk production after the invasion of the infectious agent in the secretory epithelium of the mammary gland. Species *Staphylococcus aureus* is the most pathogenic agent in the mammary gland, having important implications for public health, since it produces enterotoxins that survive the heat treatments applied to milk. The use of proper antibiotics is an important tool for the treatment of the disease. However, they should be used judiciously, since the main cause of failure in therapy is bacterial resistance to the drug. This study uses an antibiogram to evaluate the resistance of microorganisms isolated from goat milk samples with subclinical mastitis. During the period from August 2017 to June 2018, 392 goat milk samples were collected from two farms in the states of Minas Gerais and São Paulo. For isolation and identification, 0.01 mL of milk was inoculated into agar-blood plates containing 5% defibrinated goat blood, and 0.01 mL of milk was inoculated into MacConkey agar plates, with further incubation at 37 °C for 24 h. Significance and interpretation of the number of isolated colonies followed the criteria proposed by the National Mastitis Council. Strains confirmed as *S. aureus* were subjected to *in vitro* susceptibility test by antibiotic disc diffusion assay, against the following antimicrobials: azithromycin, ceftiofur, ciprofloxacin, clindamycin, chloramphenicol, erythromycin, gentamicin, linezolid, penicillin G, rifampicin, tetracycline, sulfazotrin, ampicillin. Interpretation of inhibition halos followed the standards of the National Committee For Clinical Laboratory Standards. Of the 392 samples, 116 (88.0%) strains of coagulase-negative staphylococci and 16 (12.0%) strains of *S. aureus* were biochemically confirmed. *Staphylococcus aureus* strains showed greater resistance to penicillin in both states: 60% resistance in strains from Minas Gerais and 83.3% in strains from São Paulo. Antibiotics ampicillin and rifampicin showed 50% resistance in strains from Minas Gerais and 83.3% in strains from São Paulo, respectively, which would be ineffective in the treatment of mastitis in these herds. Therefore, the use of antibiogram as a control tool helps Veterinarians and owners in decision making regarding the appropriate treatment.

Keywords: antibiotic, treatment, public health

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